

IN THE CLAIMS:

1 1-40. (Canceled)

1 41. (New) A system for servicing one or more household appliances, the system com-
2 prising:

3 A. one or more monitoring subsystems associated with the one or more house-
4 hold appliances, each monitoring subsystem

5 i. continuously monitoring the operations of a given household ap-
6 pliance and retaining as functional data information relating to the
7 functioning of the household appliance,

8 ii. analyzing the functional data and related historical and statistical
9 data maintained by the monitoring subsystem and determining if
10 the household appliance is in need of attention to avoid a failure of
11 the household appliance, and

12 iii. transmitting one or more warning and alarm messages indicating
13 that the household appliance requires attention and the related
14 functional data; and

15 B. a center for receiving the messages sent by the monitoring subsystems in a
16 plurality of households, the center

17 i. further analyzing the respective messages and the received data
18 and related functional, historical and statistical data maintained by
19 the service center to produce an in-depth analysis of the overall
20 data,

21 ii. determining if one or more of the appliances requires other or more
22 attention than is indicated by the one or more monitoring subsys-
23 tems, and

24 iii. contacting one or more users of the associated household appli-
25 ances to inform them of the particular attention required by the
26 household appliances to avoid failures of the respective household
27 appliances.

1 42. (New) The system of claim 41, wherein the center further analyzes data from a plu-
2 rality of appliances in a given household.

1 43. (New) The system of claim 41, wherein the center further analyzes data from a plu-
2 rality of appliances in a plurality of households.

1 44. (New) The system of claim 41, wherein each monitoring subsystem
2 produces alarm messages when it is determined that immediate attention is re-
3 quired, and
4 produces warning messages when it is determined that other than immediate
5 attention is required.

1 45. (New) The system of claim 41, wherein the center
2 further determines if service is required, and if so
3 a. determines whether the user of the one or more appliances has a level-
4 of-service contract that covers the particular service, and
5 b. arranges service of the respective appliances in accordance with the
6 provisions of the contract, if the user has the proper service contract.

1 46. (New) The system of claim 41, wherein the center distinguishes between repairs that
2 require a service technician and repairs that are serviceable by a user.

1 47. (New) The system of claim 41, wherein the center analyzes patterns of use of the
2 one or more appliances and schedules appropriate preventative maintenance checks.

1 48. (New) The system of claim 47, wherein the patterns of use analysis includes number
2 of cycles performed by a given appliance.

1 49. (New) The system of claim 41, wherein the center notifies the user what preventiva-
2 tive maintenance is to be done if any maintenance is to be performed by the user.

1 50. (New) The system of claim 41, wherein the center
2 determines if the one or more appliances are being used inefficiently by the user
3 based on the related historical and statistical data, and
4 recommends to the user a more efficient pattern of use for one or more of the ap-
5 pliances.

1 51. (New) The system of claim 41, wherein the center
2 determines if a given appliance is an inefficient model based on the pattern of use
3 and related historical and statistical data, and
4 recommends to the user a more suitable replacement model for the appliance.

1 52. (New) The system of claim 51, wherein the center arranges for the delivery and in-
2 stallation of the replacement appliance model selected by the user.

1 53. (New) The system of claim 41, wherein each monitoring subsystem

2 sets one or more local alarms when user attention is required by the appliance,
3 and

4 transmits a message indicating that the appliance requires attention and the related
5 functional data if the user does not attend to the appliance within a predetermined time of
6 setting the one or more alarms.

1 54. (New) The system of claim 41, wherein each monitoring subsystem sends a local
2 alarm of one appliance through all available appliances of a household to alert the user of
3 a condition requiring attention.

1 55. (New) The system of claim 41, wherein the center alerts the user of a warning or
2 alarm automatically, without the need for a human input at the center.

1 56. (New) The system of claim 41, wherein the center alerts the user of a warning or
2 alarm manually, requiring a human input at the center.

1 57. (New) The system of claim 41, wherein one or more of the monitoring subsystems
2 further monitor environmental conditions.

1 58. (New) The system of claim 41, further comprising:

2 C. a network over which the monitoring subsystems transmit the messages;

3 D. a gateway connected to the network to receive the messages, the gateway

4 i. transmitting alarm messages to the center as soon as the messages
5 are received, and

6 ii. retaining warning messages and transmitting the retained messages
7 at predetermined times or when other transmissions are made to
8 the center.

1 59. (New) The system of claim 41, wherein the messages include headers in which at
2 least one bit is set to one value to indicate alarm messages and set to another value to in-
3 dicate warning messages.

1 60. (New) The system of claim 41, wherein the monitoring subsystem further
2 associates flags with the messages and sets the respective flags to indicate that
3 particular messages have been sent to the center,
4 checks the flags to determine if a given message has already been sent, and
5 sends a message if the flags indicate that the message has not been sent.

1 61. (New) The system of claim 41, wherein
2 one or more of the monitoring subsystems are adapters placed on appliances not
3 originally equipped with monitoring subsystems, the adapters monitoring and analyzing
4 at least the energy consumption of the associated appliances, and
5 the remaining monitoring subsystems are originally installed on the associated
6 appliances during assembly, the originally-installed monitoring subsystems monitoring
7 and analyzing at least internal functions of the associated appliances.

1 62. (New) A method for servicing one or more household appliances, the method com-
2 prising the steps of:

3 at one or more monitoring subsystems associated with the one or more household
4 appliances

5 A. continuously monitoring the operations of a given household appliance
6 and retaining as functional data information relating to the functioning of
7 the household appliance,

8 B. analyzing the functional data and related historical and statistical data
9 maintained by the monitoring subsystem and determining if the household
10 appliance is in need of attention to avoid a failure of the household appli-
11 ance, and

12 C. transmitting one or more warning and alarm messages indicating that
13 the household appliance requires attention and the related functional data;
14 and

15 at a center for receiving the messages sent by the monitoring subsystems in a plu-
16 rality of households

17 A. further analyzing the respective messages and the received data and
18 related functional, historical and statistical data maintained by the service
19 center to produce an in-depth analysis of the overall data,

20 B. determining if one or more of the appliances requires other or more
21 attention than is indicated by the one or more monitoring subsystems, and

22 C. contacting one or more users of the associated household appliances to
23 inform them of the particular attention required by the household appli-
24 ances to avoid failures of the respective household appliances.

1 63. (New) The method of claim 62, wherein said step of further analyzing at the center
2 further comprises:

3 analyzing data from a plurality of appliances in a given household.

1 64. (New) The method of claim 62, wherein said step at the center of further analyzing
2 further comprises:
3 analyzing data from a plurality of appliances in a plurality of households.

1 65. (New) The method of claim 62, further comprising at the one or more monitoring
2 substations the steps of:
3 producing alarm messages when it is determined that immediate attention is
4 required, and
5 producing warning messages when it is determined that other than immediate
6 attention is required.

1 66. (New) The method of claim 62, further comprising at the center the steps of:
2 further determining if service is required, and if so
3 a. determining whether the user of the one or more appliances has a level-
4 of-service contract that covers the particular service, and
5 b. arranging service of the respective appliances in accordance with the
6 provisions of the contract, if the user has the proper service contract.

1 67. (New) The method of claim 62, further comprising at the center the step of: distin-
2 guishing between repairs that require a service technician and repairs that are serviceable
3 by a user.

1 68. (New) The method of claim 62, further comprising at the center the steps of:
2 analyzing patterns of use of the one or more appliances; and

3 scheduling appropriate preventative maintenance checks.

1 69. (New) The method of claim 68, wherein the patterns of use analysis includes num-
2 ber of cycles performed by a given appliance.

1 70. (New) The method of claim 62, further comprising at the center the step of: notify-
2 ing the user what preventative maintenance is to be done if any maintenance is to be per-
3 formed by the user.

1 71. (New) The method of claim 62, further comprising at the center the steps of:
2 determining if the one or more appliances are being used inefficiently by the user
3 based on the related historical and statistical data, and
4 recommending to the user a more efficient pattern of use for one or more of the
5 appliances.

1 72. (New) The method of claim 62, further comprising at the center the steps of:
2 determining if a given appliance is an inefficient model based on the pattern of
3 use and related historical and statistical data, and
4 recommending to the user a more suitable replacement model for the appliance.

1 73. (New) The method of claim 72, further comprising at the center the step of: arrang-
2 ing for the delivery and installation of the replacement appliance model selected by the
3 user.

1 74. (New) The method of claim 62, further comprising at the one or more monitoring
2 subsystems the steps of:

3 setting one or more local alarms when user attention is required by the appliance;
4 and

5 transmitting a message indicating that the appliance requires attention and the re-
6 lated functional data if the user does not attend to the appliance within a predetermined
7 time of setting the one or more alarms.

1 75. (New) The method of claim 62, further comprising at the monitoring subsystem the
2 step of: sending a local alarm of one appliance through all available appliances of a
3 household to alert the user of a condition requiring attention.

1 76. (New) The method of claim 62, further comprising at the center the step of: alerting
2 the user of a warning or alarm automatically, without the need for a human input at the
3 center.

1 77. (New) The method of claim 62, further comprising at the center the step of: alerting
2 the user of a warning or alarm manually, requiring a human input at the center.

1 78. (New) The method of claim 62, further comprising at the one or more monitoring
2 subsystems the step of: further monitoring environmental conditions.

1 79. (New) The method of claim 62, further comprising the steps of:
2 transmitting, by the monitoring subsystems, the messages over a network;
3 connecting a gateway to the network to receive the messages;

4 transmitting, from the gateway, alarm messages to the center as soon as the mes-
5 sages are received; and

6 retaining, at the gateway, warning messages and transmitting the retained mes-
7 sages at predetermined times or when other transmissions are made to the center.

1 80. (New) The method of claim 62, further comprising the step of: including headers in
2 the message in which at least one bit is set to one value to indicate alarm messages and
3 set to another value to indicate warning messages.

1 81. (New) The method of claim 62, further comprising the steps of:
2 associating flags with the messages and sets the respective flags to indicate that
3 particular messages have been sent to the center,
4 checking the flags to determine if a given message has already been sent, and
5 sending a message if the flags indicate that the message has not been sent.

1 82. (New) The method of claim 62, wherein
2 one or more of the monitoring subsystems are adapters placed on appliances not
3 originally equipped with monitoring subsystems, the adapters monitoring and analyzing
4 at least the energy consumption of the associated appliances, and
5 the remaining monitoring subsystems are originally installed on the associated
6 appliances during assembly, the originally-installed monitoring subsystems monitoring
7 and analyzing at least internal functions of the associated appliances.